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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/671,555	09/29/2003	Vincenzo Salvatore Marrella	D-21377	4277

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EXAMINER

WARTALOWICZ, PAUL A

ART UNIT PAPER NUMBER

1754

DATE MAILED: 05/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/671,555	<b>Applicant(s)</b> MARRELLA ET AL.	
	<b>Examiner</b> Paul A. Wartalowicz	<b>Art Unit</b> 1754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 September 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>9/29/03</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 2, 4, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schunck (G.B. 2006814) in view of Wasala et al. (U.S. 4193776) and Roensch (U.S. 4464228).

Schunck teaches a process for recycling a process stream condensate from a steam reforming system that produces an uncontaminated superheated steam stream (steam generator 4 produces uncontaminated steam, page 1, lines 118-122) and at least one process condensate stream contaminated with products of a steam reformer of the steam reforming system (page 1, lines 120-124) comprising collecting condensate from the at least one process condensate stream and forming a

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contaminated condensate stream therefrom (page 1, lines 120-124), transferring heat from a first part of the uncontaminated superheated steam stream to the contaminated condensate stream in three stages in which the condensate is first heated at heat exchanger 16 (this constitutes pre-heating, page 2, lines 24-27), then heating in steam-heated circulation unit 11 (this constitutes a boiler stage, page 1, lines 125-129), then finally heating the condensate with heat-exchanger 17 before entering reactor 3 (this constitutes the final process steam super-heater stage, page 2, lines 31-35; page 1, lines 115-120) thereby to form an uncontaminated condensate stream (steam condensate flows from steam-heat circulation unit to degasser as steam condensate, page 2, lines 26-31), combining a second part of the uncontaminated super-heated steam stream with the contaminated superheated steam stream to form a combined superheated steam stream (heated condensate flowing from the molstener column 9 to heat-exchanger 17 and then to reactor 3 is combined with part of the uncontaminated steam before entering reactor 3, page 1, lines 115-120; page 2, lines 30-35), recycling the uncontaminated condensate stream to the steam reforming system as make up for the uncontaminated superheated steam stream (steam condensate leaving steam-heated circulation unit 11 is fed to degasser 7 to be transformed to steam in steam generator 4, page 2, lines 29-31; page 1, lines 118-122). Schunck fails to teach wherein pressurizing the contaminated condensate stream and wherein using at least part of the combined superheated steam stream to form a hydrocarbon and steam containing process stream as a feed to the steam reformer and wherein collecting condensate from an external process condensate stream produced externally to the

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steam reformer and forming the contaminated condensate stream from the external process condensate stream and the at least one process condensate stream and wherein stripping dissolved gases out of the at least one process condensate stream in a stripping column and collecting the condensate as a column bottoms of the stripping column.

As to the limitation wherein pressurizing the contaminated condensate stream, Roensch teaches a process for stripping volatile contaminants from ammonina plant process condensate (col. 2, lines 43-46) wherein stripped condensate is pumped for the purpose of transferring the condensate to other operating units where high quality water is advantageous (col. 3, lines 5-8).

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide wherein stripped condensate is pumped in Schunck in order to transfer the condensate to other operating units where high quality water is advantageous (col. 3, lines 5-8) as taught by Roensch.

As to the limitation wherein collecting condensate from an external process condensate stream produced externally to the steam reformer and forming the contaminated condensate stream from the external process condensate stream and the at least one process condensate stream, Wasala et al., however, teach a process for purification of process condensate (col. 1, lines 5-10) wherein process condensate is imported from a hydrogen or other synthesis gas plant (col. 2, lines 47-50) for the purpose of purifying the process condensate in a stripping tower (col. 3, lines 33-36).

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide wherein process condensate is imported from a hydrogen or other synthesis gas plant (col. 2, lines 47-50) in Schunck in order to purify the process condensate in a stripping tower (col. 3, lines 33-36) as taught by Wasala et al.

As to the limitation wherein using at least part of the combined superheated steam stream to form a hydrocarbon and steam containing process stream as a feed to the steam reformer, Schunck teaches that it is known to combine steam and a hydrocarbon stream to form a feed to a reactor (page 1, lines 81-85).

Therefore, it would be obvious to one of ordinary skill in the art at the time applicant's invention was made to provide wherein using at least part of the combined superheated steam stream to form a hydrocarbon and steam containing process stream as a feed to the steam reformer by the reasoned explanation that it is known to combine steam with a hydrocarbon stream to form a feed to a reactor (page 1, lines 81-85) as taught by Schunck.

As to the limitation wherein stripping dissolved gases out of the at least one process condensate stream in a stripping column and collecting the condensate as a column bottoms of the stripping column, Roensch, however, teaches a process for stripping volatile contaminants from ammonia plant process condensate (col. 2, lines 43-46) wherein the stripping tower is equipped with a collection basin (col. 3, lines 5-7) for the purpose of pumping the stripped condensate to other operating units where high quality water is advantageous (col. 3, lines 5-8).

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide the stripping tower is equipped with a collection basin (col. 3, lines 5-7) in Schunck in order to pump the stripped condensate to other operating units where high quality water is advantageous (col. 3, lines 5-8) as taught by Roensch.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schunck (G.B. 2006814) in view of Wasala et al. (U.S. 4193776) and Roensch (U.S. 4464228) and Tegge et al. (U.S. 3642731).

Schunck teach a process for recycling a process stream condensate as described above in claim 1. Schunck fails to teach wherein the process condensate is collected in a collection drum.

Tegge et al., however, teach a process for the production of polymers (col. 1, lines 30-35) wherein a drum includes a collection portion (col. 8, lines 9-11) for the purpose of collecting immiscible liquid to be withdrawn and pumped (col. 8, lines 10-14).

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide wherein a drum includes a collection portion (col. 8, lines 9-11) in Schunck in order to collect immiscible liquid to be withdrawn and pumped (col. 8, lines 10-14) as taught by Tegge et al.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schunck (G.B. 2006814) in view of Wasala et al. (U.S. 4193776) and Roensch (U.S. 4464228) and Erickson (U.S. 4846240).

Schunck teaches a process for recycling a process stream condensate as described above in claim 1. Schunck fails to teach wherein heat is transferred from the first part of the uncontaminated superheated steam stream to the contaminated condensate stream in a single plate and frame exchanger.

Erickson, however, teaches a process for concentrating aqueous solutions (col. 1, lines 5-7) wherein it is known to use a frame and plate heat exchanger (col. 3, lines 30-31) for the purpose of providing heat exchange between cycle fluids (col. 3, lines 24-26).

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide wherein it is known to use a frame and plate heat exchanger (col. 3, lines 30-31) in Schunck in order to provide heat exchange between cycle fluids (col. 3, lines 24-26).

Claim 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schunck (G.B. 2006814) in view of Wasala et al. (U.S. 4193776) and Roensch (U.S. 4464228) and Erickson (U.S. 4846240) and Dickinson (U.S. 4377066).

Schunck teaches a process for recycling a process stream condensate as described above in claim 1. Schunck fails to teach wherein a third part of the uncontaminated superheated steam stream is exported.



Dickinson, however, teach a process for utilization of heating values of carbonaceous fuels (col. 1, lines 7-10) wherein energy is recycled for the purpose of maximizing exportable heat in the form of super-heated steam (col. 23, lines 59-61).

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide wherein energy is recycled in Schunck in order to maximize exportable heat in the form of super-heated steam (col. 23, lines 59-61) as taught by Dickinson.

Claim 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schunck (G.B. 2006814) in view of Wasala et al. (U.S. 4193776) and Roensch (U.S. 4464228) and Erickson (U.S. 4846240) and Drnevich et al. (U.S. 2003/0110693).

Schunck teaches a process for recycling a process stream condensate as described above in claim 1. Schunck fails to teach wherein a third part of the uncontaminated superheated steam stream is exported.

Drnevich et al. (U.S. 2003/0110693), however, teach a process for a steam methane reformer (paragraph 0047, lines 1-3) wherein it is known to export steam from a steam methane reformer system (paragraph 0049, lines 3-6).

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide wherein it is known to export steam from a steam methane reformer system (paragraph 0049, lines 3-6) in Schunck as disclosed in the similar process of methane reforming as taught by Drnevich et al.

**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul A. Wartalowicz whose telephone number is (571) 272-5957. The examiner can normally be reached on 8:30-6 M-Th and 8:30-5 on Alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on (571) 272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Paul Wartalowicz  
April 6, 2006



COLLEEN P. COOKE  
PRIMARY EXAMINER